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## **Energy and Climate Report**

### **Afternoon Briefing - Your Preview of Today's News**

The following news provides a snapshot of what Bloomberg BNA is working on today. Read the full version of all the stories in the final issue, published each night.

#### **Grid Study Resurrects Debate Over Utility Air Pollution Permits**

*Posted August 28, 2017, 7:31 A.M. ET*

*By [Abby Smith](#) and [Dean Scott](#)*

The Energy Department's electric grid study is reviving debate over possible changes to Clean Air Act permitting requirements, underscoring industry arguments that the regulations limit coal-fired power plants' ability to improve efficiency.

The [grid study](#) commissioned by Energy Secretary Rick Perry, released Aug. 23, makes a number of suggestions to boost baseload power, including changes to wholesale energy markets to better value the reliability and resiliency that supporters argue coal and nuclear provide. But the study also suggested that environmental regulations are a hurdle for utilities that want to modify their coal-fired plants to boost efficiency, identifying the EPA's New Source Review (NSR) program as an "important concern."

That program requires manufacturing facilities, power plants, and other industrial facilities to obtain a permit before beginning construction on new facilities, as well as for "major modifications" to existing plants. The grid study suggests uncertainty over those permitting requirements "discourages" utilities from retrofitting plants with carbon capture equipment or investing in efficiency improvements.

"Ironically, the uncertainty surrounding NSR requirements has led to a significant lack of investment in plant and efficiency upgrades, which would otherwise lead to more efficient power generation, benefits to grid management, and reduced environmental impacts," Energy Department staff wrote in the study.

Any effort to ease Clean Air Act permitting requirements would be strongly opposed by environmental advocates. But the Trump administration wouldn't be the first to tackle New Source Review requirements over those objections: the Environmental Protection Agency under President George W. Bush tried to overhaul the permitting regulations, but their changes were ultimately set aside by a federal appeals court.

Several companies, such as Missouri-based utility [Ameren Corp.](#) and a [coalition](#) that includes BP America and Koch Industries, encouraged the Trump administration to alter New Source Review requirements as a part of a strategy to boost domestic manufacturing.

Ameren Missouri, in an email statement provided to Bloomberg BNA, said the Energy Department's report "correctly highlights problems" with the permitting program.

"Rather than encourage efficiency projects, which reduce emissions including greenhouse gases, past administrations have targeted boiler and turbine projects that improve efficiency, thereby deterring those beneficial projects," Ameren said. "The EPA should reaffirm how and when a project triggers NSR review and that emission calculations must account for efficiency improvement."

#### **Legitimate Hurdles to Efficiency?**

There are some obvious reasons why the EPA's interpretation of its permitting authority raises costs for power plants and delays investments that would improve plant efficiency, according to John Graham, who worked as administrator of the Office of Management and Budget's Office of Information and Regulatory Affairs under Bush.

"You start with the basic economic theory, that NSR raises the anticipated cost of making energy efficiency investments because, one, delays in the approval processes, and two, the possibility of additional expenditures triggered by NSR," Graham told Bloomberg BNA in a statement.

A 2005 National Research Council [report](#) found that using economic incentives to improve emissions control, rather than a "command and control" regulatory approach, "would cut the costs of compliance by about a third without any compromise in emissions controls," Graham said.

Jeff Holmstead, who served as the EPA's assistant administrator for air and radiation from 2001 through 2005, said environmental groups that oppose changes to the permitting program are ignoring the real-world experience of power plants that have tried and failed to negotiate the regulatory hurdles.

"There is no doubt that the threat of NSR discourages plants from making energy efficiency improvements," Holmstead, who now heads Bracewell LLP's environmental strategies group, told Bloomberg BNA. "If you look at all the NSR enforcement cases brought against coal-fired power plants, it's in large part because efficiency was being sought" through improvements by utilities, which were deemed a significant plant modification, he said.

Holmstead and Graham were among the authors of a recent [paper](#) suggesting changes that they say would address industry concerns with the permitting program while maintaining the environmental benefits.

#### **Climate Rule Rewrite**

One of industry's solutions is to have the EPA revise its new source requirements in conjunction with what many expect to be a scaled back "replacement rule" for the Obama administration's Clean Power Plan, Holmstead said.

The EPA under Bush tried a similar fix—opting to exclude pollution control projects from new source requirements—but its revision was struck down in a 2006 ruling by the U.S. Court of Appeals for the District of Columbia, [New York v. EPA](#).

Several labor groups, including the United Mine Workers of America and the AFL-CIO, suggested the EPA couple New Source Review changes with a narrow replacement rule for the Obama-era

Clean Power Plan, which sought to curb carbon dioxide emissions from existing power plants.

According to a handout from a June 26 meeting with White House officials on Clean Power Plan repeal, labor groups pitched a replacement rule that would require only heat rate improvements from power plants. The groups argued that EPA also must “streamline” permitting requirements, which they indicated would open the door to “substantial efficiency improvements” and carbon emission reductions.

Allison Watkins Mallick, an environmental attorney with Baker Botts LLP in Washington, D.C., told Bloomberg BNA that revamping New Source Review is “certainly something [EPA] could address simultaneously” with revisions to the Clean Power Plan, though she did not speak to specific proposals.

In terms of New Source Review fixes, Mallick pointed to a shift in how EPA determines whether emissions increase. Generally, a source triggers permitting requirements if it undertakes modifications that result in increased air pollution.

#### **Regulatory Changes Needed**

Mallick said the way the EPA currently measures an increase in emissions is by focusing on overall emissions.

“One thing they might consider changing as part of NSR reform is instead of looking at increases in overall tonnage,” the agency could instead look at “emissions rates, similar to how it does in” new source performance standards.

This shift wouldn’t require a change to the Clean Air Act, she said. The Bush EPA proposed to make such a change, but didn’t follow through on that.

“That hasn’t been reviewed by the courts,” Mallick said, adding there is “no case law specifically limiting” that change.

But Mallick also noted a challenge to any reform effort would be the EPA’s bandwidth to undertake such a significant rulemaking effort. She cautioned that while the EPA could link Clean Power Plan revisions and New Source Review changes, that could require more time because of split resources.

The EPA will have to weigh “how this fits in with other competing regulatory priorities,” Mallick said.

#### **Carbon Capture Barriers**

Holmstead said there may be comparatively less support for the grid study’s portrayal of permitting requirements as a major hurdle for carbon capture and storage projects.

That issue is “all about cost,” he said, noting that current incentives to capture and store haven’t been enough to spur widespread deployment.

New source requirements are “not one of the top reasons for not moving forward” on carbon capture, Holmstead said, although they could be more of an issue if more projects are built. Because capturing carbon eats into the efficiency of a power plant, utilities could opt to produce more power, and thus emit more pollution, to offset the “parasitic” drain on power from carbon

capture, he said.

On whether NSR permitting is an obstacle to deploying carbon capture and storage technologies, Graham said a carbon tax would be the most efficient way to support such efforts.

Mallick noted that any installation of carbon capture equipment constitutes a “physical change” that could potentially put the plant “into the land of NSR applicability.”

Nonetheless, “technological barriers are significant, if not more significant,” than the regulatory hurdle New Source Review poses, she said.

### **Skepticism of Actual Burdens**

Environmental advocates who were involved in the legal fight over the Bush administration’s push to revamp the permitting program are skeptical of the grid study’s arguments.

“It seems as though the Department of Energy has skipped that part of history,” Ann Weeks, legal director for the Clean Air Task Force, told Bloomberg BNA.

The grid study cites several sources that pre-date that court decision, including a 2002 EPA report which proposed New Source Review changes and a 2003 report from the American Enterprise Institute, an industry-funded think tank.

None of the grid study’s arguments over New Source Review are new, Weeks said. But, she suggested the Trump administration felt the need to bring them up again in order to advance the president’s pro-coal agenda.

“What it all boils down to is [industry arguing], ‘We don’t want to clean up our dirty coal plants,’” Weeks said. If the Trump administration tries “to do the same kinds of [reforms to New Source Review] with the same lack of basis that the Bush administration did, I would imagine we will meet them in the same place and have the same conversations.”

Weeks said power plant efficiency improvements generally shouldn’t trigger New Source Review requirements and said the “only thing” easing New Source Review requirements would do is “tell the people who live near these facilities and breathe the pollution that they don’t matter.”

In addition, reducing regulatory requirements wouldn’t “guarantee” an improved outlook for coal, Weeks said.

“The main reason coal has fallen in the last number of years is because natural gas prices are so low,” she said. “Blaming [New Source Review] for all those problems is a little silly.”

### **Trump Taps Democrat for New Term as Nuclear Regulator**

*Posted August 28, 2017, 10:46 A.M. ET*

*By Alan Kovski*

President Donald Trump announced his intent to nominate Jeffery Baran to a new term on the Nuclear Regulatory Commission.

Baran, a Democrat, has been a member of the commission since 2014. If confirmed, he would start a new five-year term July 1, 2018.

Baran worked for the House Energy and Commerce Committee during 2009-2014 as a staff counsel and then Democratic staff director for energy and environment. He was a counsel to the House Oversight and Government Reform Committee from 2003 to 2008.

His priorities since joining the commission have included, among other things, implementation of safety lessons learned from the 2011 failures of the Fukushima Daiichi nuclear power plant in Japan. The White House announced Trump's intent to nominate him late Aug. 25.

Baran is one of three current members of the NRC, along with Chairman Kristine Svinicki, a Republican, and Stephen Burns, an independent.

Two more Republicans, Annie Caputo and David Wright, have been nominated to the five-member commission. The Senate Environment and Public Works Committee approved their nominations, and they await votes by the full Senate. Caputo is an energy policy adviser to the Environment and Public Works Committee, and Wright is a former chairman of the South Carolina Public Service Commission.

### **Corporate America May be Best Hope to Re-Engage Trump on Climate**

*Posted August 28, 2017, 8:03 A.M. ET*

By [Dean Scott](#)

You'd think U.S. companies would be ready to throw in the towel after they failed to sway President Donald Trump to stay in the landmark Paris climate pact.

But companies that favor U.S. engagement on climate are exploring ways to push the White House to re-think its approach to climate change and clean energy. They include bolstering formal business alliances; working with California and other states whose governors seek to engage business on the issue; and trying to reframe the climate discussion by using terms such as "more resilient infrastructure" in place of "adaptation."

Corporate voices are considered the last, and perhaps only, hope of getting Trump to focus on climate impacts at home and get him back to negotiations in climate talks abroad after his announcement June 1 that he is pulling the U.S. out of the Paris Agreement.

Dozens of Fortune 500 companies want to ensure they aren't left outside the room in future talks that could impact whether their renewable energy and low-carbon technologies are able to compete with the more than 195 nations still in the pact.

Nothing in the work toward addressing climate "is as impressive as our business leaders saying we need America back at the table," said Sen. Ben Cardin (D-Md.), the top Democrat on the Senate Foreign Relations Committee.

#### **'Lead By Example'**

Microsoft, which urged the Trump administration not to abandon the Paris agreement, seeks in the wake of Trump's decision "to lead by example," Rob Bernard, Microsoft's chief environmental

strategist, said in a statement to Bloomberg BNA.

The technology giant wants to invest in more renewable energy to power its global data center operations and expand its use of an internal carbon fee, which it began in 2012 to make its data centers, offices, manufacturing, and other business units accountable for their contributions to the company's overall carbon footprint.

BP, which along with others in the energy sector such as Exxon Mobil, Chevron, and Shell backed the Paris climate pact, sees climate change as "an important long-term challenge justifying global action" in the wake of Trump's decision to pull out of the Paris deal, and it continues to back an economywide price on carbon, BP America said in a statement to Bloomberg BNA.

The company said it will continue to back increased production of natural gas, which is less carbon-intensive than oil or coal, and support more innovation in carbon-mitigation technologies.

Other large companies are part of the Center for Climate and Energy Solutions' Business Environmental Leadership Council, a group of mostly Fortune 500 companies launched in 1998 to back mandatory climate policies. Earlier this month, the group's members—which include Bank of America, Duke Energy, and Berkshire Hathaway Energy—were joined by Amazon, which the council said was the leading U.S. corporate purchaser of renewable energy last year.

"It has never been more important to bring business leaders together with policymakers to explore pragmatic steps toward a clean energy future," Bob Perciasepe, the center's president, said in a statement.

Beyond those corporate efforts, a total of 14 states including California, New York, Rhode Island, Virginia, and Washington also have launched the U.S. Climate Alliance, pledging to fill the gap from the federal retreat on climate.

California Gov. Jerry Brown (D) has announced plans to host a September 2018 international climate summit in San Francisco in which he envisions entrepreneurs, world leaders and others exploring solutions. And the nonprofit Climate Group will host Climate Week NYC in New York Sept. 18 to 24 featuring business leaders and others to advocate for climate action to coincide with the annual UN General Assembly.

### **Reframing the Discussion**

Some say reframing the discussion could help in pushing policies that ensure roads, bridges, and other projects are better able to weather sea level rise, more flooding and higher temperatures.

"The data shows that as we get temperature increases, we get more cracking potholes, increased flooding, and you end up with more infrastructure loss," Lisa Grice, global director of sustainability services at the Ramboll Environ, an environmental consulting firm, told Bloomberg BNA.

The Trump administration is more likely over time to be receptive to ideas that benefit the clean energy industry or bolster reliability of the power grid if framed not so much as climate-friendly projects but rather "wins for driving jobs or providing other economic value," according to Grice, who worked during the Bush administration to launch the Environmental Protection Agency's Climate Leaders program, which recognized voluntary corporate action on climate.

"You need to think of these as climate change tactics," she said, such as completing infrastructure projects that the administration can tout as simply making good on Trump's pledge for improved

roads and bridges. They may include what Grice calls improved “asphalt road resiliency” that—without directly mentioning climate change—will shore up defenses against climate impacts.

Some of that change in terminology may appear subtle at first but is likely necessary, according to Grice, who said a preference for the more neutral-sounding term of “resiliency” over climate adaptation is already underway.

“We have a challenge not just from extreme storm events but also a combination of typical storm events with modest sea level rise, which also creates all kinds of property loss and impacts and elevates the cost of climate adaptation,” Grice said. “Finding a way to frame the federal government as a hero or savior would really appeal to this administration” if it could point to progress in shoring up communities from those threats, even as it will likely do so without even mentioning climate, she said.

“Now, the more individual companies can help frame anything that the federal government is doing around, say, energy efficiency, renewable energy, or climate resilience as a win for driving jobs or other economic value will incentivize this administration to do more,” she said.

### **No Letting Up**

The Trump administration so far has shown no signs of letting up on its campaign against climate policies, from ending overseas climate aid to rolling back Obama administration rules cutting vehicle and power plant greenhouse gas emissions.

A coordinated business campaign to keep the U.S. in the Paris deal also didn’t sway Trump. About 1,000 companies and investors urged the president to stay, including U.S. industry leaders in technology, energy, health, and manufacturing such as Apple, Google, Facebook, HP, Intel Corp., Blue Cross Blue Shield of Massachusetts, Johnson Controls and Mars Inc.

More recently, climate-friendly corporate voices may also have to overcome what appears to be a growing schism between some corporate leaders and Trump over his response to a white supremacist rally in Charlottesville, Va., earlier this month. Trump disbanded two advisory groups made up of CEOs—the Strategy & Policy Forum and the Manufacturing Council—but only after corporate chiefs began resigning.

Also scrapped: an Advisory Council on Infrastructure, which Trump only created in mid-July to advise him on his \$1 trillion infrastructure plan. Among the projects the infrastructure panel was to make recommendations on were two that could impact the U.S. carbon footprint: renewable energy generation and electricity transmission.

The Trump administration argues that it isn’t losing a seat at the table in international climate talks even as it walks away from the Paris deal because it can continue in negotiations under the parent treaty to the Paris deal, the UN Framework Convention on Climate Change. Even with Trump’s announcement, the U.S. cannot technically withdraw from the Paris pact for four years, a span that gives U.S. companies and other supporters years to push Trump to reconsider his withdrawal.

### **Still Prodding Trump to Tweak Pledge**

Some continue to argue that Trump can address much of his concern by taking advantage of flexibility in the Paris accord that allows nations to adjust their pledges to curb greenhouse gas emissions. That would allow Trump to pare back the U.S. pledge Obama made to the Paris deal, which is to cut emissions up to 28 percent by 2025 from 2005 levels.

“Rather than withdrawing from the agreement, a process that will take several years to accomplish, the U.S. is free to adjust its commitment if the [Trump] Administration feels the original commitment is inappropriate,” Stephen Harper, Intel Corp.'s global director of environment and energy policy, said in a statement to Bloomberg BNA.

“The Paris process will also provide a forum for countries to strike additional bi- and multilateral deals on technology transfer, particularly in the area of renewables and alternative energy,” Harper said.

“U.S. companies will lose business if we are not part of such deals,” he said, and the specter of a U.S. withdrawal from a deal signed by more than 190 parties could isolate it from world efforts to confront global warming and develop the renewable energy technologies those nations will need for such a global effort, he said.

Staying outside what is now a “virtually global effort to address climate change could make it vulnerable to border taxes and other trade retaliation by countries who are part of that effort,” Harper said, and such policies “would punish U.S. exports and our economy.”

#### **‘Open to Re-Engaging’**

Trump “is open to re-engaging in the Paris Agreement if the United States can identify terms that are more favorable to it, its businesses, its workers, its people, and its taxpayers,” according to a State Department statement issued Aug. 4 as the U.S. notified the UN of its plans to withdraw. One theme the Trump administration intends to bring to future climate change negotiations, according to the statement, is finding ways to help other countries “access and use fossil fuels more cleanly and efficiently.”

Myron Ebell, energy and environment director at the Competitive Enterprise Institute, who favored withdrawal from the Paris accord, said he reads any hint of a renegotiation as little more than a token acknowledgment to those in the Trump camp who favor international engagement.

“The president has clearly said that the only deal the U.S. would be interested in doing would be one that would serve America’s interests,” Ebell said. “As he has defined it, America’s interest is to be the world’s largest energy producer and to become one of the major coal, oil, and liquefied natural gas exporters in the world.”

#### **Too Much Wind? Harvey Could Overpower Texas Wind Generation**

*Posted August 28, 2017, 7:44 A.M. ET*

*By [Brian Eckhouse](#), [Christopher Martin](#) and [Ryan Collins](#)*

One of the worst things that can happen to a wind farm is too much wind.

Hurricane Harvey was packing top winds of 115 miles an hour Aug. 26, according to a National Hurricane Center advisory. That’s more than twice the 55 miles-an-hour speed that prompts many turbines to shut off. The result: The storm could knock out between 2.1 and 3.6 gigawatts of power near the Texas coast, according to Bloomberg New Energy Finance.

Wind-farm operators have been bracing for days. Avangrid Inc., the New Haven, Connecticut-based

power company, evacuated all personnel from its wind farm complex on the South Texas coast, a spokesman said in an email.

“The problem with this hurricane is they don’t see it trailing off in any direction so it’s just going to hover,” said Jeff Ferguson, the Magnolia, Texas-based senior vice president of project development at Apex Clean Energy Inc. “So it could be next week for the winds to diminish adequately so we can resume normal operations.”

Production was set to peak in the late Aug. 25 and taper off as turbines automatically begin to shut down, according to Simon Mahan, a director at Southern Wind Energy Association. Turbines generally aren’t designed for hurricane risk, said Alex Morgan, a New York-based analyst at BNEF.

“They’ll pitch down and yaw into the wind, which allows them to safely pinwheel,” said John Martinez, director of operation at Pattern Energy Group Inc., which owns the 283-megawatt Gulf [Wind farm](#) in Kenedy County. “This way the blades don’t flex, which can be damaging. The turbines are designed to automatically do that.”

### **Least Worrisome**

Wind power may be the least of the region’s power-market worries. If hundreds of thousands of people lose power as is expected, it doesn’t matter whether the wind farms are running or not, because they’d have nowhere to send the electricity generated. It’s the very reason why power and gas are trading down.

“With gas plentiful and load down, I suspect the lack of wind won’t matter at all,” Cody Moore, the Houston-based president of BioUrja Group’s power trading division. “I’d be more concerned with the safety of the turbines than any need for load.”

Texas easily boasts the most wind capacity among U.S. states, about 21 gigawatts, or one-quarter of national capacity, according to the American Wind Energy Association. A majority of the wind is located in western Texas, which Genscape Inc. expects won’t be greatly affected by Harvey.

The 3.6 gigawatts of capacity installed in the south power zone of the Electric Reliability Council of Texas is a different matter. About 2.1 gigawatts is directly along the coast.

“As that storm starts coming onshore, there’s a good chance winds will exceed 55 miles per hour,” Michaela Farese, a Boston-based meteorologist and demand forecaster at Genscape, said in an interview Aug. 25.

—With assistance from Naureen S. Malik and Bob Brennan.

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### **Energy Regulator Makes First Move in Months, OKs Nexus Pipeline**

*Posted August 28, 2017, 11:15 A.M. ET*

*By [Catherine Traywick](#) and [Mark Chediak](#)*

DTE Energy Co. and Enbridge Inc. won U.S. approval to build the \$2 billion Nexus natural gas pipeline in the Midwest, ending a review that lasted almost two years and forced delays to the

project.

The 257-mile (413-kilometer) pipeline will transport 1.5 billion cubic feet a day of Appalachian gas to Ohio, Michigan, Illinois and Ontario. The Federal Energy Regulatory Commission approved the project Aug. 25. It's the first major pipeline the agency has authorized since the February resignation of then-Chairman Norman Bay, whose departure left the commission without the quorum needed to make major decisions.

The approval spares Nexus developers further delays, after being forced to push the project's in-service date into 2018. DTE Chief Executive Officer Gerard Anderson said in July that two-thirds of the pipeline's capacity had been contracted, with more commitments expected once construction begins. He said the delay wouldn't affect its earnings projections.

DTE and Enbridge can begin preparations to start construction in order to get the pipeline into service in 2018, the companies said in a joint email statement. A more precise in-service date will be provided after the companies review the U.S. order, they said.

The developers expected the pipeline to be approved in February, prior to Bay's departure. FERC approved three other major natural gas lines during Bay's final days: Williams' \$3 billion Atlantic Sunrise pipeline, National Fuel Gas Supply Corp.'s \$455 million Northern Access project and Energy Transfer Partners' \$4.2 billion Rover line.

The pipeline will take 7 to 10 months to build, Chief Operating Officer Jerry Norcia said during a July earnings call.

—With assistance from Naureen S. Malik.

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## **China Power Behemoth Born as Shenhua, Guodian Merger Approved**

*Posted August 28, 2017, 02:51 P.M. ET*

*By Bloomberg News*

China is creating the world's largest power company.

The government of President Xi Jinping approved the merger of Shenhua Group Corp., the country's top coal miner, with China Guodian Corp., among its largest power generators, the State-owned Assets Supervision and Administration Commission said Aug. 28. With assets of 1.8 trillion yuan (\$271 billion), the new entity will be the world's second-biggest company by revenue and largest by installed capacity, according to Bloomberg New Energy Finance.

The Shenhua-Guodian tie-up could be the first of a handful of mergers in China's power industry as top policy makers try to cut industrial overcapacity and the number of state-owned enterprises. The announcement concludes months of speculation about the combination, first reported by Bloomberg in June.

"People have been waiting for the other shoe to drop," said Tian Miao, a Beijing-based senior analyst at Sun Hung Kai Financial Ltd. "This confirms the direction of state-owned enterprise reform, with companies in the same industry merging to reduce redundant investment and improve

efficiency.”

Neither Shenhua nor Guodian’s Beijing-based spokesmen answered calls to their offices seeking comment or replied to emailed questions. About three hours before Sasac’s one-sentence statement was released Aug. 28, Ling Wen, Shenhua’s acting chairman, told reporters in Hong Kong that the company still hadn’t received merger approval.

The new company, expected to be called National Energy Investment Corp., will have installed capacity of more than 225 gigawatts, topping Electricite de France SA and Enel SpA, according to Frank Yu, an analyst at Wood Mackenzie Ltd. EDF, as the French generator is known, had net installed capacity of 137.5 gigawatts last year, according to a company [presentation](#). Italy’s Enel had total installed capacity of 83 gigawatts as of June 30, it said.

### **Mutual Benefits**

Shenhua will be able to lower its reliance on coal-fired capacity, currently about 90 percent, by gaining some of Guodian’s clean energy assets, Yu wrote in a research note earlier this month. Guodian, meanwhile, will be able to benefit from Shenhua’s coal supply and price risk management, as well as its integrated infrastructure of railways, harbors, and ships.

As part of the merger, China Shenhua Energy may acquire Guodian’s Shanghai-listed GD Power Development Co., Bloomberg news reported in late June. GD Power trading has been suspended since June 5, as have China Shenhua Energy’s Shanghai shares.

Shenhua had 1.014 trillion yuan in assets, it said in a [report](#) in June, and its listed unit produced about 290 million tons of coal last year. Guodian had total assets of 803 billion yuan, according to a [statement](#) from the company posted by state-backed industry group China Electricity Council. Shenhua had 82 gigawatts of generating capacity, while Guodian had 145 gigawatts, according to BNEF.

### **Coal & Renewables**

Xi’s government also is seeking to lower the country’s reliance on coal power and increase the use natural gas, as well as wind, solar, hydropower, and nuclear. The generation capacity of the merged company will be 23 percent renewables, according to BNEF.

“This is crucial for Shenhua since due to new changes, wind, solar, nuclear and hydro generation hours are still guaranteed by regulators, while coal generators must increasingly compete in liberalized wholesale markets,” BNEF analyst Sophie Lu wrote in an Aug. 9 report. “This is only one in a series of megamergers China plans for power sector consolidation.”

The government also may seek a way to bundle nuclear power generators into the megamerger mix, according to Wood Mackenzie’s Yu.

“The ultimate goal is to form bigger energy companies that can hedge against market risks between coal and power,” Yu said. “Or they can sell their nuclear technology or their coal-power technology to emerging markets in Asia. That’s what the government wants to promote.”

China Huaneng Group, the country’s biggest coal-fired power producer, may merge with State Power Investment Corp., a coal-fired generator that also owns State Nuclear Power Technology Corp., Bloomberg reported in May. SPIC Chairman Wang Binghua said in July that the company is in contact with Huaneng Group about a restructuring and “something big may happen later.”

China Huadian Corp. and China Datang Corp. are the remaining two of China's big-five state-power generators.

—With assistance from Francois de Beaupuy and Chiara Albanese

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## **Virtual Currency May Boost Australia's Grassroots Solar Trade**

*Posted August 28, 2017, 7:55 A.M. ET*

*By [Jason Scott](#)*

An Australian company is introducing its own version of bitcoin that will let homeowners and businesses sell excess energy generated from their rooftop solar panels to neighbors, without a middleman taking a cut.

As of Aug. 28, Perth-based [Power Ledger](#) had sold about 57 percent of the 100 million so-called "power tokens" offered at 8.8 U.S. cents a piece since Aug. 27. A \$25,000 cap has been installed to discourage large entities from controlling the market.

"This will make solar panels more viable financially and improve efficiency in the energy market," Jemma Green, the company's co-founder and chair, said in an interview. "It will also allow mum-and-dad investors who want to support renewable energy to buy small stakes in large-scale, community-owned solar projects."

According to a [RenewEconomy](#) report in April, Australia's solar power capacity "is expected to double over the next few years as households continue to invest in rooftop panels to reduce electricity bills and the large-scale solar sector takes off after years of promise."

About 5.6 gigawatts of the nation's total solar capacity of 6 gigawatts comes from rooftop panels, with the balance derived from large-scale projects, according to RenewEconomy. While at this stage they only meet about 3.3 percent of the nation's total energy demand, the panels are on 21 percent of suitable Australian rooftops, the highest penetration of rooftop solar in the world, it said.

The tokens being issued by Power Ledger, started in May 2016, will also let solar farms sell electricity to individual customers, and apartment buildings and offices trade energy from their rooftop solar panels, Green said.

### **Blockchain Technology**

To facilitate the trades, the company developed its own blockchain technology, which uses a distributed ledger to facilitate settlements without an intermediary. Blockchains are now being used for everything from concert ticket sales to distributing medical records confidentially and issuing catastrophe bonds.

"The internet revolution has given us lots of ways of sharing information, but distributing it in a controlled way has previously been elusive," Green said. "Blockchains are a way to ensure there's only one true copy that can't be altered and can be passed around among peers."

Power Ledger is also selling another tranche of tokens at a price yet to be disclosed. About 90 million of the 250 million tokens in that tranche have been sold.

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